

AMENDMENTS TO THE CLAIMS:

1-13. (Cancelled)

14. (Currently Amended): An excimer laser system for crystallizing an amorphous silicon layer, comprising;

an excimer laser generator that generates an excimer laser beam having a Gaussian energy density profile;

a beam homogenizer to transform the excimer laser beam into a laser beam having a stepped energy density distribution profile that includes at least a first energy density and a second energy density, wherein the first energy density is at least 380 mJ/cm² and the second energy density ranges from 310 mJ/cm² to 370 mJ/cm²; and

a filter disposed between the excimer laser generator and the beam homogenizer.

15. (Original): The system according to claim 14, wherein the filter includes at least two beam stops.

16. (Original): The system according to claim 15, wherein the beam stops include at least a material selected from a group comprising nickel (Ni) and molybdenum (Mo).

17. (Original): The system according to claim 14, wherein the first energy density melts the amorphous silicon layer to a first depth from a surface of the amorphous silicon layer that is equal to a first thickness of the amorphous silicon layer and the second energy density melts the amorphous silicon layer to a second depth from the surface of the amorphous silicon layer that is less than the first depth.

18. (Original): The system according to claim 14, wherein an energy density difference between the first and second energy densities is about 10 to 15 mJ/cm².

19. (Withdrawn): A method for forming a polycrystalline silicon layer, comprising the steps of:

- forming an insulation layer on a substrate;
- forming an amorphous silicon layer on the insulation layer;
- forming seeds in a bottom portion of the amorphous silicon layer adjacent to an interface between the insulation layer and the substrate; and
- converting the amorphous silicon layer to polycrystalline silicon using an excimer laser beam that includes a stepped energy density distribution profile having substantially flat first and second energy density distribution profiles.

20. (Withdrawn): The method according to claim 19, wherein the step of converting includes a crystallizing step having a third energy density distribution profile between the first and second energy density distribution profiles.